DOCUMENT RESUME

ED 029 327 CG 003 946

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Program for Learning in Accordance with Needs.

American Educational Research Association, Washington, D.C.
Pub Date Feb 68
Note-6p.; Paper presented at the American Educational Research Association Meetings, Chicago, Illinois, February 5-8, 1968
EDRS Price MF-$0.25 HC-$0.40
Descriptors-Educational Programs, *Instructional Design, *Instructional Innovation, *Learning, *Learning Processes, *Needs

The goals of Project PLAN (Program for Learning in Accordance with Needs) are: (1) to identify and define the needs of young people between the ages six and 18, and (2) to develop procedures to enable these people to acquire identified and defined knowledge, attitudes, skills and appreciations. Also included are the specific goals of the school district whose students are participating in the Project. The system established to achieve the defined goals contains the following components: (1) a comprehensive set of educational objectives, (2) a teaching-learning unit that acts as a guide for achieving these objectives, (3) a set of tests that indicates whether or not students mastered the objectives, (4) guidance and individual planning, and (5) evaluation using an IBM 360 MODEL 50 computer. Project PLAN demonstrates the possibilities of an individualized system of instruction using the computer as an aid and resource to the teacher. Further research needs were indicated. (LS)

ED029327

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

CG 003 946

PROGRAM FOR LEARNING IN ACCORDANCE WITH NEEDS*

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Project PLAN (Program for Learning in Accordance with Needs) is defined most meaningfully in terms of the goals and objectives of the program. In broadest terms, the two primary goals of the system are first, to identify and to define the needs for each of our young people between the ages of 6 and 18, and second, to develop procedures which will enable these young people to acquire the knowledge, skills, abilities, attitudes, and appreciations which have been identified and defined.

Project PLAN is not restricted to one particular philosophy of education or system of values and is intended as an operating program rather than a directional one. However, in any application of Project PLAN, it is necessary to include the specific goals of the school district with respect to the young people participating in its educational program. In this country, these goals are usually defined as preparing each individual student for maximum use of his potentials and for effective living as a member of the local and national community. The direction provided by the report, Goals for Americans#, can be summarized as self-fulfillment with respect to both occupational and avocational activities and roles and meeting citizenship responsibilities. These appear to represent a concensus of a number of groups which have undertaken to develop a set of goals and are being used as a general guide within which local communities may establish the specific goals for the schools in their community.

The system established for Project PLAN to achieve the goals defined above contains five components. The first of these is a comprehensive set of educational objectives. These are stated at a level of specificity such that they typically require about two hours of student study to achieve. They are

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*Paper presented at American Educational Research Association Meetings, February 1968, Chicago, Illinois.

#Goals for Americans, Report of the President's Commission on National Goals, The American Assembly, Columbia University, 1960, 372 pp.

grouped together with approximately five objectives to a module. The intent is to provide a unit of instruction which can be achieved by the typical student in about two weeks.

A second component is the teaching-learning unit. Each unit represents a guide to the student as to how he may best proceed to achieve the five objectives in the module. It is intended that as many as six or eight teaching-learning units be developed for each module to allow for differences in learning styles and interests of various students.

The third component of the system is a set of tests. For each module several test items are used for each objective and the score reported by the computer to the student indicates whether or not he has mastered each of the objectives in the module.

The fourth set of procedures is related to guidance and individual planning for each student. These procedures are designed to aid the student in learning about adult activities and roles with respect to both avocations and occupations. They will also include procedures for assisting the student to learn the significance of his developed abilities and interests and tentative values. On the basis of these two sets of information the student will be assisted to learn to develop plans for establishing personal objectives and achieving these goals. As a critical element of planning, special training will be given in decision-making. The final element of this component in the system is a set of procedures to assist each student in developing the ability to manage his planned program for his personal educational development.

The fifth and last component of the Project PLAN system represents the evaluations and systems aspects. The central element of this program is an IBM 360 Model 50 computer which is connected to each of the school buildings with lines and remote input/output terminals. The computer is programmed to score the various tests used in monitoring the development of each student, to keep files on the experience and progress of each student, and to keep records of the results obtained by various students using teaching-learning units and guidance and planning procedures to evaluate the effectiveness of each of these elements for students having known characteristics.

The accumulation of these types of data in computer files make it possible to match specific teaching-learning units to specific students and also to obtain the necessary information for revising the materials to improve their effectiveness with students.

For a system such as Project PLAN to be effective, substantial research support is necessary. Perhaps the most important research requirements are the following four items:

1. A definition of the educational objectives in terms of specific abilities, skills, knowledge, and appreciations which are required to enable a student to achieve specified goals. At the present time, Project PLAN is relying primarily on the statements of objectives in broad curricular terms developed by other groups. This is a very important area and one requiring a long-range program of a very extensive nature to obtain adequate results. Perhaps the most promising study in this area in Project TALENT which proposes to follow-up for a twenty year period a group of about 400,000 high school student given a two day battery of tests in 1960. As a supplement to this study, the greatest need is for a series of intensive case studies of individuals at all levels from Grade One to the stage of firmly established career roles. Some current studies represent a good start in this area, but give sound assistance to young people in their career and life planning activities.

2. The identification of instructional methods and materials appropriate for enabling various types of students to meet specific needs. In Project PLAN many types of materials are being used with a wide variety of students and these are being evaluated in terms of their effectiveness. However, the current requirements for production of teaching-learning units will not permit the special design and development of units which provide definitive tests of crucial hypotheses regarding instructional methods and materials. There is a very great need for formulation and try-out of these hypotheses if progress is to be made in developing more effective instructional methods and materials.

3. The definition of the guidance procedures effective in assisting students to become efficient in planning their lives, making decisions, and taking responsibility for their personal, social, and educational development. Considerable progress has been made in developing and trying out procedures in the individual planning area. The results from Project TALENT provide a sound basis for assisting students in planning and decision-making activities. This developmental work needs to be supplemented by some critical research studies to determine which of various proposed approaches are of most assistance to students in developing their plans.

4. The development of programs for training teachers to be of most assistance to students in achieving their goals efficiently in an individualized program of education. The in-service training of teachers for individualized education requires an extensive and complex program. Initial work has been done in Project PLAN to analyze teacher behavior and student behavior using both check lists and videotapes. Preliminary arrangements have been made with the Far West Regional Educational Laboratory and the Stanford University Research and Development Center for Teacher Education to cooperate with the school districts and staff of Project PLAN in the development of a training program for use in these schools.

Project PLAN has recently completed its first year of operation. About 2,000 students have been using the system in 14 school districts in Grades 1, 5, and 9 since September 1967. A staff of 35 teachers are now developing teaching-learning units for Grades 2, 6, and 10 and these will be used in the 14 school districts beginning September 1968. It is anticipated that the development and try-out of materials for Grades 1 - 12 will be completed by June 1971.

The present staff of Project PLAN includes Dr. William M. Shanner who is directing the development of much of the educational system including the instructional objectives, teaching-learning units, the performance standards in the form of module tests and placement tests, and the field operations which includes the teacher development aspects of the program. Working with him in these various activities are Dr. Harold F. Rahmlow

in learning methods and materials, Dr. Margaret T. Steen on field operations, Dr. Mary E. Willis and Dr. Agatha Townsend in performance standards, and as a research advisor for instructional systems, Dr. Robert F. Mager. Dr. Calvin E. Wright is directing the evaluations and systems work assisted by Dr. Glenn E. Roudabush and Dr. Richard T. Johnson. In charge of the development of the guidance and individual planning procedures is Dr. G. Brian Jones. Assisting on the administrative and management aspects of the program are Mr. Carsten Lien, Managing Director, and Dr. Thomas J. Quirk, Assistant to the Director.

In concluding this presentation of the present progress of Project PLAN I would like to quote from a student and teacher at Brittan Acres School in San Carlos Elementary School District in California. In responding to a questionnaire item, a fifth grade student stated: "Project PLAN has been fun. I have learned many things. I have learned more things than I would have learned in a different class. I think more classes should have Project PLAN." This student's fifth grade teacher made the following comment at a meeting of teachers and administrators in her district: "This is the first year since I started teaching that I have really come to know my students as individuals." Much similar anecdotal evidence is available indicating that students, teachers, and school districts believe that Project PLAN is an innovation that represents great opportunities for an effective educational program.

During the next few months a principal function of the staff directing this program will be to obtain some hard data which checks on the student's statement that he has learned more than he would have learned in a different class and also to find out whether in fact this teacher does know more about her students as individuals than does the teacher across the hall and the teachers in the other schools in that district using more conventional methods. Much remains to be done to achieve the full operation of the program conceptualized in Project PLAN.

The most gratifying aspect of the program in the last few months has been that in each month since September, distinct and noticeable progress has been made in the direction of full operation of the program as conceived. If the teachers and staff are able to make as much progress in the next year of the project, Project PLAN should be well on the way to demonstrating the possibilities of an individualized system of instruction using the computer as an aid and resource to the teacher.